WHAT IS CLAIMED IS:

1. A heat driven acoustic orifice type pulse tube cryocooler comprising:

a driver (10) generating a flame radiating heat having a predetermined temperature, homogeneously heating a driving gas, and adiabatically compressing the driving gas so that the driving gas generates an acoustic having a predetermined frequency;

a regenerator (20) receiving the driving gas output from the driver, and cooling the driving gas;

a pulse tube (30) receiving the cold driving gas output from the regenerator, adiabatically compressing the driving gas, and generating the driving gas having a high temperature;

a cold reservoir (60) receiving the high temperature driving gas output from the pulse tube, and adiabatically expanding the driving gas;

a first hot heat exchanger (30) installed between the generator (20) and the pulse tube (40), and exchanging heat with the outside;

a cold heat exchanger installed between the pulse tube (40) and the cold reservoir (60), and exchanging heat with the outside; and

an orifice (62) installed within the cold reservoir, the orifice controlling an amount of the driving gas running between the cold reservoir (60) and the pulse tube (40) to constantly maintain a pressure of the cold reservoir;

wherein the driving gas repeats the process of the compression and expansion centering around the pulse tube.

2. The cyrocooler according to claim 1, wherein the driver includes a burner

(11) into which a mixed gas from the outside is input, a second hot heat exchanger (12) installed within the burner (11), and having the driving gas, a heat transferring member (12a) surrounding the outer surface of the second hot heat exchanger (12) and installed at a predetermined distance from the inner wall surface of the burner (11) in order to homogeneously heat the driving gas, and a post treatment heat exchanger (13) mounted within the second hot heat exchanger (12) and exposed out of the burner (11) to be connected with the regenerator (20), the heat exchanger (13) controlling a heat capacity transferred to the outside and the driving gas.

3. The cyrocooler according to claim 2, wherein the mixed gas is a gas mixed with a fuel and an air.

4. The cyrocooler according to claim 2, wherein the second hot heat exchanger has a cylindrical shape.

5. The cyrocooler according to claim 2, wherein the heat transferring member has a metal knit shape formed weaving a metal fiber.

6. The cyrocooler according to claim 5, wherein the metal fiber includes a 20.00 % weight of Cr, a 5.00 % weight of Al, a 0.10 % weight of Y, a 0.30 % weight of Si, 0.08 % weight of Mn, 0.03 % weight of Cu, 0.03 % weight of C, and a 74.46 % weight of Fe.

7. The cyrocooler according to claim 2, wherein the pulse tube includes a stack (41) having thin plates (41a) piled up parallel to the flowing direction of the driving

gas, and a diffuser connected to the cold reservoir (60) via the cold heat exchanger (50), the orifice being installed in the connection portion of the cold reservoir.

8. The cyrocooler according to claim 2, wherein the driving gas is an inert gas.

9. The cyrocooler according to claim 2, wherein the pulse tube includes a stack (41) having thin plates (41a) piled up parallel to the flowing direction of the driving gas, and a diffuser connected to the cold reservoir (60) via the cold heat exchanger (50), the orifice being installed in the connection portion of the cold reservoir.

10. The cyrocooler according to claim 1, wherein the driving gas is an inert gas.

11. The cyrocooler according to claim 1, wherein the pulse tube includes a stack (41) having thin plates (41a) piled up parallel to the flowing direction of the driving gas, and a diffuser connected to the cold reservoir (60) via the cold heat exchanger (50), the orifice being installed in the connection portion of the cold reservoir.